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691.1 Hunt

**INSPECTION
OF
CREOSOTED
TIMBER**

**STANDARD SPECIFICATIONS
FOR
CREOSOTED WOOD BLOCKS**

**ADOPTED BY
ASSOCIATION FOR
STANDARDIZING PAVING
SPECIFICATIONS**

ROBERT W. HUNT & Co.
ENGINEERS

**Bureau of Inspection, Tests and Consultation
Cement, Chemical and Physical Laboratories**



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INSPECTION

THE inspection services which we offer cover the timber used for cutting the blocks, the cutting of the blocks and the impregnation of the blocks with the preservative, the analysis of the preservative used in treating the blocks, and the supervising of the loading of the blocks after treatment. The inspection of the preservative as used under specifications applying upon the work consists of analysis as prescribed by the specifications. Our inspector takes samples of the oil during the treatment of the block, either from the storage tank or from the cylinder, or both, submitting them to our nearest laboratory. These samples are taken at the discretion of the inspector as often as he deems necessary, to insure properly covering the work.

The attached specification has been largely used for wood preservation and the timber used in paving block.

Specifications for Paving WITH Creosoted Wood Blocks

Adopted by Association for Standardizing
Paving Specifications.

TIMBER

The wood to be treated shall be southern yellow pine, Norway pine, Douglas fir, or tamarack; but only one kind of wood shall be used in any one contract.

Yellow pine blocks shall be made from what is known as southern yellow pine, and shall be well manufactured, full size, saw-butt, all square edges, and free from all defects, such as checks, unsound, loose or hollow knots, knot holes, worm holes, through shakes and round shakes that show on the surface. In yellow pine timber, the annular rings shall average not less than seven (7) to the inch, and shall in no case be less than five (5) to the inch, measured radially from the heart, so as to include the greatest number of rings possible.

Norway pine, Douglas fir and tamarack blocks shall be cut from timber that is first class in every respect, and shall be of the same grade as that defined for southern yellow pine.

SIZE OF BLOCKS.

The blocks shall be from five (5) to ten (10) inches long, but shall average eight (8) inches; they shall be from three (3) to four (4) inches in width; and they shall be four (4) inches in depth.*

*Note.—The depth of the blocks may be reduced to three and one-half ($3\frac{1}{2}$) inches in medium traffic streets, and to three (3) inches on light traffic streets or alleys. The width and depth of the blocks, however, must never be equal. In case blocks three (3) inches in depth are used, they shall not exceed eight (8) inches in length.

The blocks used in any one street or improvement, however, shall be of uniform width, and there shall always be a difference between the width and depth of the blocks of not less than one-quarter ($\frac{1}{4}$) of an inch.

A variation of one-sixteenth ($\frac{1}{16}$) of an inch shall be allowed in the depth, and one-eighth ($\frac{1}{8}$) of an inch in the width of the blocks.

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PRESERVATIVE**

**Each specification should designate the kind of tar from which the preservative shall be made.

SPECIFICATION "A."

The preservative to be used shall be a product of coal gas, water gas, or coke oven tar, which shall be free from all adulterations and contain no raw or unfiltered tars, petroleum compounds, or tar products obtained from processes other than those stated.

The specific gravity shall not be less than one and eight-hundredths (1.08) nor more than one and fourteen-hundredths (1.14) at a temperature of thirty-eight (38) degrees centigrade.

Not more than three and one-half ($3\frac{1}{2}$) per cent shall be insoluble by continuous hot extraction with benzol and chloroform.

On distillation, which shall be made exactly as described in Bulletin No. 65 of the American Railway Engineering & Maintenance of Way Association, the distillate, based on water free oil, shall not exceed one-half ($\frac{1}{2}$) of one (1) per cent at one hundred and fifty (150) degrees centigrade, and shall not be less than thirty (30) nor more than forty (40) per cent at three hundred and fifteen (315) degrees centigrade.

The oil shall contain not more than three (3) per cent of water.

The manufacturer of the blocks shall permit full and complete sampling at all times and places, and shall, if required, furnish satisfactory proof of the origin of the preservative.

Samples of the preservative, taken from the treating tank during treatment, shall at no time show an accumulation of more than two (2) per cent of sawdust, dirt or other foreign matter. Due allowance shall be made for such accumulation of foreign matter by injecting an additional quantity of oil into the blocks.

SPECIFICATION "B."

The preservatives to be used shall be a distillate of coal gas or coke oven tar, and shall be free from all adulteration and contain no raw tar, filtered or unfiltered tars, or pitches, petroleum compounds or other tar products.

It shall be completely liquid at thirty-eight (38) degrees centigrade, and shall have a specific gravity at that temperature of not less than one and three-hundredths (1.03) nor more than one and eight hundredths (1.08).

It shall contain not more than two (2) per cent of matter insoluble by hot extraction with benzol and chloroform.

On distillation, which shall be made exactly as described in Bulletin No. 65 of the American Railway Engineering & Maintenance of Way Association, the distillate, based on water free oil, shall be within the following limits:

At 210 degrees centigrade, not more than 5 per cent.

At 235 degrees centigrade, not more than 35 per cent.

At 315 degrees centigrade, not more than 85 per cent.

The oil shall yield a coke residue not exceeding three (3) per cent.

The distillate, between two hundred and ten (210) degrees centigrade and two hundred and thirty-five (235) degrees centigrade, shall yield solids on cooling to fifteen (15) degrees centigrade. The preservative shall contain not more than three (3) per cent of water.

The manufacturer of the blocks shall permit full and complete sampling at all times and places, and shall, if required, furnish satisfactory proof of the origin of the preservative.

Samples of the preservative taken from the treating tank during treatment shall at no time show an accumulation of more than two (2) per cent of sawdust, dirt or other foreign matter. Due allowance shall be made for such accumulation of foreign matter by injecting an additional quantity into the blocks.

Note.—The Engineer may, at his discretion, use either Specification "A" or "B" or both, depending on local conditions.

TREATMENT

The blocks shall be treated with the preservative under pressure and shall at no time be subjected to a temperature of over two hundred and forty (240) degrees F. They shall, after treatment, show satisfactory penetration of the preservative, and all blocks that have been warped, checked or otherwise injured in the process of treatment, shall be rejected.

The blocks shall be treated with the preservative so that they shall contain not less than eighteen (18) pounds per cubic foot.

Note.—This amount may range from sixteen to twenty pounds, at the discretion of the Engineer, dependent on local conditions.

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INSPECTION

The blocks shall be subject to inspection before, during and after treatment, and may be reinspected at any time. The plant shall be equipped with gauges and appliances necessary for the proper inspection, and every facility for this inspection shall be afforded.

Note.—The following method is recommended for testing blocks taken from the street. The blocks shall be tested for amount of preservative contained by boring a hole three-fourths ($\frac{3}{4}$) of an inch in diameter through the block parallel to the fibre at a point half way on the longest line that can be drawn from the center of the heart to the edge of the block. If the center of the heart does not occur in the block, the hole shall be bored in the center. The borings shall be mixed and an average sample taken.

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City of Joplin, Mo.
City of Jefferson City, Mo.
City of Joliet, Ill.
City of Jersey City, N. J.
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City of Lincoln, Ill.
City of Louisville, Ky.
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City of Streator, Ill.
City of St. Louis.
City of St. Paul, Minn.
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City of Indianapolis, Ind.
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City of Columbus, Ohio.
City of Dayton, Ohio.
City of Venice, Ill.
City of Waukegan, Ill.
City of Wilmette, Ill.
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